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09/846,917	05/01/2001	Thomas Joseph Killian	2685/5434	4661

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EXAMINER	
MEW, KEVIN D	
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2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/846,917	KILLIAN, THOMAS JOSEPH	
	Examiner	Art Unit	
	Kevin Mew	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 1/17/2007 regarding claims 1-35 have been fully considered. Claims 1-35 are currently pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-9, 11-12, 14-21, 23-29, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley et al. (US Publication 2002/0138628) in view of Berlovitch et al. (USP 6,061,334).

Regarding claim 1, Tingley discloses a system for exchanging information on a network (see server farm configuration of the system in Fig. 3; note that the system comprises elements 60, 62, 64, 66, 68, 70, 72, 64, 76, 78), comprising:

a switch (**Virtual Networking Device**, element 62, Fig. 3) coupled to a plurality of ports (**Virtual Networking Device VND couples to a plurality of ports of the Smart bridge 66**, see Fig. 3; note that the end point of the Smart Bridge or switch is interpreted as a port);

an address table (**Virtual Networking Device maintains a translation table that maps IP addresses to Ethernet/MAC addresses**, see page 5, paragraph 0049, lines 1-8 and Fig. 5);

a transient computer (**a server of Virtual Network A**, see element 74, Fig. 3) having an address (**the server has a physical address**, see page 2, paragraph 0011, lines 18-23), said transient computer (**a server of Virtual Network A**, see element 74, Fig. 3) coupled to one of said plurality of ports (**a server of the Virtual Network A coupled to the right end point of the switch**, Fig. 3); and

a plurality of private networks (**Virtual Networks A, B, C**, elements 74, 76, 78, Fig. 3);

wherein said transient computer (**a server of Virtual Network A**, see element 74, Fig. 3) communicates with said one of said plurality of private networks (**communicates with other Virtual Networks B, C**) via said one of said plurality of ports (**via the right end point of the Smart bridge or switch**) and said switch (**Virtual Networking Device,** element 62, Fig. 3).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show one of said plurality of private networks is dynamically assigned to said one of said plurality of ports connected to said transient computer by said switch according to said address table.

However, Berlovitch discloses an address table (a table containing MAC addresses, Fig. 29) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of

Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system of method of Tingley will show an address table and dynamically assign one of said plurality of private networks (Virtual Networks A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 2, Tingley discloses the system of claim 1, wherein said plurality of private networks are virtual local area networks (**Virtual Networks A, B, C**, see page 4, paragraph 0041, lines 1-3 and Fig. 3).

Regarding claim 3, Tingley discloses the system of claim 1, wherein said address table is stored at said switch (**Virtual Networking Device 62 maintains a translation table that maps IP addresses to Ethernet/MAC addresses**, see page 5, paragraph 0049, lines 1-8 and Fig. 5).

Regarding claim 4, Tingley discloses the system of claim 1, wherein said address table includes said address to identify said transient computer (**Ethernet/MAC address**, see page 5, paragraph 0049, lines 1-11 and Fig. 5).

Regarding claim 5, Tingley discloses the system of claim 4, wherein said address is a media access control address (**MAC address**, see page 5, paragraph 0049, lines 1-11 and Fig. 5).

Regarding claim 6, Tingley discloses the system of claim 1, wherein said switch includes a wire to said port (**the Virtual Network Specific Ethernet Link 68 that connects switch 66 to the end point of Virtual Network A**, see Fig. 3).

Regarding claim 7, Tingley discloses the system of claim 1, further comprising an Ethernet switch for controlling an Ethernet network (**Smart bridge 66**, see element 66, Fig. 3).

Regarding claim 8, Tingley discloses the system of claim 1, further comprising a broadband connection connecting said network with an external virtual private network (see page 7, paragraph 0066, lines 1-14).

Regarding claim 9, Tingley discloses a method for communicating over a network from a plurality of ports, the method comprising:

issuing a data packet having an address from a transient computer (**a server from a Virtual Network sends an ARP request packet having a virtual IP address**, see page 2, paragraph 0011, lines 5-9 and 18-23 and Fig. 3) connected to one of a plurality of ports (**the end point of the switch that connects to the Virtual Network A**, see elements 74, Fig. 3);

determining one of a plurality of networks (**Virtual Networks A, B, C**, see elements 74, 76, 78, Fig. 3) accessible by said computer (**accessible by server A**, see element 74, Fig. 3) according to an address table using said address (**according to the MAC address of servers associated with VLAN ID of Virtual Networks A, B, C**, see page 4, paragraph 0041, lines 1-11 and Fig. 3); and

wherein said transient computer (**a server of Virtual Network A**, see element 74, Fig. 3) communicates with said one of said plurality of private networks (**communicates with other Virtual Networks B, C**) via said one of said plurality of ports (**via the right end point of the Smart bridge or switch**) and said switch (**Virtual Networking Device,** element 62, Fig. 3).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show dynamically assigning one of said plurality of networks to said one of said plurality of ports.

However, Berlovitch discloses an address table (a table containing MAC addresses, col. 9, lines 41-47) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system of method of Tingley will show an

address table and dynamically assign one of said plurality of private networks (Virtual Networks A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 11, Tingley discloses the method of claim 9, further comprising accessing said address table containing said address (see page 5, paragraph 0049, lines 1-8).

Regarding claim 12, Tingley discloses the method of claim 11, further comprising updating said address table (**storing the Ethernet/MAC address of the response in the Ethernet/MAC address field of the entry in the translation table**, see page 5, paragraph 0050, lines 30-35).

Regarding claim 14, Tingley discloses the method of claim 9, further comprising sending an alarm message when said address does not correspond to said one of said plurality of networks (**ARP request packet and the destination address are added to a table of unresolved entries**, see page 7, paragraph 0064, lines 1-7; this table of unresolved entries is considered as an alarm message).

Regarding claim 15, Tingley discloses the method of claim 9, further comprising receiving data from said one of said plurality of networks at said one of said plurality of ports (**Virtual Networking Device receives ARP request packet from Virtual Network A at the designated port connecting smart bridge 66 and Virtual Network A**, see page 4, paragraph 0041, lines 1-11 and Fig. 3).

Regarding claim 16, Tingley discloses the method of claim 9, further comprising accessing shared resources from said one of said plurality of ports (**accessing VLAN tagged Ethernet link from the port that couples to Virtual Network A**, see element 64, Fig. 3).

Regarding claim 17, Tingley discloses a method for assigning (see page 2, paragraph 0012, lines 1-18) an external network (**MPLS core network**, see element 60, Fig. 3) to one of a plurality of ports (**the end point of the Smart bridge or switch that connects to the Virtual Network A is considered as other ports**, see elements 74, 68, and 62, Fig. 3) using a switch (**Virtual Networking Device**, see element 62, Fig. 3), comprising:

receiving data from said external network (**Servers for Virtual Network receives data from core network 60**, see page 2, paragraph 0012, lines 6-10, Fig. 3);

sending a data packet to said port (**MPLS core network sending packets to Servers for Virtual Network**, see page 2, paragraph 0012, lines 6-10);

retrieving an address from said port in response to said data packet (**the Virtual Networking Device looks up the entry that corresponds to the destination IP address**, see page 2, paragraph 0012, lines 1-8);

creating a virtual network (**Virtual Network A**, element 74, Fig. 3) correlating to said external network (**Switch 66 inserts Virtual Network Identifier information into the packet header to mark it as belonging to a particular Virtual Network**, see page 2, paragraph 0012, lines 13-18); and

said one of said plurality of ports (**the right end point of the Smart bridge or switch**) connected to said transient computer (**connected to server of Virtual Network A**, Fig.3) occurs via said switch (**occurs via Virtual Networking Device**, element 62, Fig. 3).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show dynamically assigning one of said plurality of networks to said one of said plurality of ports.

However, Berlovitch discloses an address table (a table containing MAC addresses, col. 9, lines 41-47) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system and method of Tingley will show an address table and dynamically assign one of said plurality of private networks (Virtual

Networks A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 18, Tingley discloses the method of claim 17, further comprising finding said address in an address table at said switch (**locating the source IP address of the packet response in the translation table of the Virtual Networking Device**, see page 5, paragraph 0050, lines 1-36).

Regarding claim 19, Tingley discloses the method of claim 17, wherein said receiving step includes receiving said data via an Ethernet hub (**switch 66 is an Ethernet hub**, see Fig. 3).

Regarding claim 20, Tingley discloses a switch coupled to a broadband connection (see page 7, paragraph 0066, lines 1-14), and connected to a plurality of ports (**the endpoints of the Virtual Network Specific Ethernet Links 68, 70, 72**, Fig. 3), comprising:

an address table listing addresses that correspond to a plurality of private networks (**translation table that comprises VLAN ID that identifies each of the Virtual Networks**, see Fig. 5); and

a switch fabric (**Smart bridge 66**, see element 66, Fig. 3) coupled to said plurality of ports to support said plurality of private networks (**the endpoints of the Virtual Network**

Specific Ethernet Links 68, 70, 72 that couple switch 66 to Virtual Networks A, B, C, respectively, see Fig. 3), and;

a transient computer (**a server of Virtual Network A**, element 74, Fig. 3) connected to one of said plurality of ports (**connected to one of the right end point of the Smart bridge or switch**, element 66, Fig. 3),

wherein said transient computer (**Virtual Networking Device**, element 62, Fig. 3) communicates with said one of plurality of private networks (**communicates with one of Virtual Networks B, C**) via said one of said plurality of ports (**via the right end point of the Smart bridge 66**, Fig. 3) and said switch (**Smart bridge**, element 66, Fig. 3).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show assigning dynamically one of said plurality of private networks to said one of said plurality of ports connected to said transient computer by said switch according to said address table.

However, Berlovitch discloses an address table (a table containing MAC addresses, col. 9, lines 41-47) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the

end-station in the address table such that the switching system and method of Tingley will show an address table and dynamically assign one of said plurality of private networks (Virtual Networks A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 21, Tingley discloses the switch of claim 20, further comprising a memory that stores said address table (**each of the entries in the table 120 of Fig. 5 would be the leaf of a tree data structure**, see page 7, paragraph 0059, lines 18-19).

Regarding claim 23, Tingley discloses a switch (**Switch 66**, see Fig. 3) that assigns ports (**assigning port-based Virtual Networks**, see page 2, paragraph 0012, lines 1-18), said switch coupled to a computer-readable medium (memory), said computer-readable medium having instructions stored thereon (**Virtual Networking Device consists of processors and associated memory for program code storage**, see page 21, paragraph 0027, lines 10-13), the instructions comprising steps for:

receiving data from said external network (**Servers for Virtual Network receives data from MPLS core network 60**, see page 2, paragraph 0012, lines 6-10, Fig. 3);

sending a data packet to one of a plurality of ports (**sending packets to the port**, see page 2, paragraph 0012, lines 6-10) connected to a transient computer (**connected to Virtual Networking Device VND**, element 62, Fig. 3);

retrieving an address from said port in response to said data packet (**the Virtual Networking Device looks up the entry that corresponds to the destination IP address**, see page 2, paragraph 0012, lines 1-8);

creating a virtual network correlating to said external network (**Switch 66 inserts Virtual Network Identifier information into the packet header to mark it as belonging to a particular Virtual Network**, see page 2, paragraph 0012, lines 13-18); and

wherein said transient computer (**a server of Virtual Network A**, see element 74, Fig. 3) communicates with private network (**communicates with other Virtual Network B or C**) via said one of said plurality of ports (**via the right end point of the Smart bridge or switch 62**, Fig. 3) and said switch (**Virtual Networking Device,** element 62, Fig. 3).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show one of said plurality of private networks is dynamically assigned to said one of said plurality of ports connected to said transient computer by said switch according to said address table.

However, Berlovitch discloses an address table (a table containing MAC addresses, Fig. 29) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected

connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system and method of Tingley will show an address table and dynamically assign one of said plurality of private networks (Virtual Networks A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 24, Tingley discloses the switch of claim 23, farther comprising switch fabric (switch 66, see Fig. 3) coupling said switch (**Switch 66**, see element 62, Fig. 3) to said plurality of ports (**see the endpoints of Virtual Networks A, B, and C**, Fig. 3).

Regarding claim 25, Tingley discloses a broadband connection system, comprising:

an Ethernet hub (**Smart Bridge 66**, element 66, Fig., 3) for supporting a plurality of virtual private networks (**for supporting Virtual Networks A, B, and C**, see Fig. 3); and

a switch (**Virtual Networking Device VND**, see element 62, Fig. 3) having an address table (**would include information in the VLAN ID field indicating a particular Virtual Network**, see paragraph 0047),

wherein said transient computer (the **server of Virtual Network A**, see element 74, Fig. 3) communicates with said one of said virtual private networks (**communicates with one of Virtual Networks B, C**, Fig. 3) via said one of said plurality of ports (**via the right end point of the Smart bridge or switch**) and said switch (**Virtual Networking Device**, element 62, Fig. 3).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show one of said plurality of private networks is dynamically assigned to said one of said plurality of ports connected to said transient computer by said switch according to said address table.

However, Berlovitch discloses an address table (a table containing MAC addresses, Fig. 29) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system of method of Tingley will show an address table and dynamically assign one of said plurality of private networks (Virtual Networks

A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 26, Tingley discloses the broadband connection system of claims 25, further comprising ports coupled to said switch (**VND is coupled to Virtual Networks A, B, and C**, Fig. 3), wherein said one of said plurality of virtual private networks are assigned to said one of said plurality of ports (**Smart bridge 66 assigns port-based Virtual Network in order to distribute packets to the proper servers of the Virtual Network**, see page 2, paragraph 0012, lines 1-5).

Regarding claim 27, Tingley discloses the broadband connection system of claim 25, further comprising an address stored in said address, said address correlating to one of said plurality of virtual private networks table (**IP address**, see Fig. 5).

Regarding claim 28, Tingley discloses a method for exchanging information over one of a plurality of virtual local area networks (**Virtual Network A of Virtual Networks A, B, C**, see Fig. 3) at one of a plurality of ports (**see the endpoint of Virtual Network A**, Fig. 3), comprising:

coupling a transient computer (**coupling a server**, element 62, Fig. 3) at one of said plurality of ports (**to one of the right end points of Smart bridge 66**, Fig. 3);

issuing a data packet having an address from said transient computer (**VND 62 sending ARP request packets having virtual IP address of server**, see page 2, paragraph 0012, lines 6-10 and page 1, paragraph 0010, lines 6-9) to a switch (**to Smart bridge 66**, Fig, 3);

issuing a data packet having an address from said transient computer (**a server from a Virtual Network sends an ARP request packet having a virtual IP address**, see page 2, paragraph 0011, lines 5-9 and 18-23 and Fig. 3) to a switch (**to Smart bridge 66**, see Fig. 3);

identifying said virtual local area network (**identifying VLAN**) according to said address (**according to VLAN tag**, Fig. 3);

assigning said virtual local area network to said port (**assigning port-based Virtual Network according to VLAN ID**, see page 2, paragraph 0012, lines 1-5);

accessing said one of said virtual local area networks (**accessing VLAN Ethernet**, see Fig. 3) to said transient computer (**to said server of Virtual Network A**, see Fig. 3) at said one of said plurality of ports via said one of said plurality of ports and via said switch (**at one of the ports of Smart bridge 66**, see page 2, paragraph 0012, lines 1-5 and Fig. 3); and

exchanging information over said virtual local area network (**exchanging data packets over VLAN Ethernet**, Fig. 3) from said computer (**from said server of Virtual Network A**, element 74, Fig. 3) to a virtual private network (**to Virtual Network B or C**, element 60, Fig. 3), wherein said virtual private network (**Virtual Network B or C**) corresponds to said address (**virtual IP address corresponds to Virtual Network**, see page 2, paragraph 0013, lines 1-8).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show assigning dynamically one of said plurality of private networks to said one of said plurality of ports.

However, Berlovitch discloses an address table (a table containing MAC addresses, Fig. 29) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system and method of Tingley will assign dynamically one of said plurality of private networks to said one of said plurality of ports.

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Regarding claim 29, Tingley discloses the method of claim 28, wherein said identifying includes accessing an address table at said switch, said address table storing said address corresponding to said one of said plurality of virtual local area networks (**translation table that**

comprises IP address that corresponds to each VLAN ID corresponding to one of the Virtual Networks A, B, C, see Fig. 5).

Regarding claim 31, Tingley discloses the method of claim 28, further comprising blocking said transient computer from said one of said plurality of virtual local area networks (**a server of Virtual Network A**, element 74, Fig. 3) when said address is not identifiable by said switch (**when there is no ARP reply, a table entry for the destination IP address would be deleted from the table of the unresolved entries, resulting in packet being discarded**, see page 7, paragraph 0065, lines 1-11; when there is no ARP reply, connection would be established from the core network to the Virtual Network).

3. Claims 10, 13, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley in view of Berlovitch, and in further view of Miner (USP 6,804,332).

Regarding claim 10, Tingley and Berlovitch disclose all the aspects of the claimed invention set forth in the rejection of claim 9 above, except fail to explicitly show the method of claim 9, further comprising determining if said one of said plurality of ports is assigned.

However, Miner discloses an electronic assistant device that comprises a switching resource to switch multiple communications channels together (see col. 9, lines 28-30 and col. 10, lines 28-29 and Fig. 2). Miner further discloses the switching resource will deallocate ports from the channel when the subscriber is disconnected from a call session (see col. 35, lines 7-20) and would reallocate the port for use to other channels if the port becomes unassigned.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the port assigning operation of the switch in Tingley and Berlovitch with the port deallocation method of Miner when the subscriber is disconnected from the network such that the port assignment will be determined. The motivation to do so is to detect the availability of a port for use in a channel connection because other sessions would then be able to use the deallocated port for exchanging information.

Regarding claim 13, Tingley and Berlovitch disclose all the aspects of the claimed invention set forth in the rejection of claim 9 above, except fail to explicitly show the method of claim 9, further comprising unassigning said one of said plurality of ports when said transient computer is disconnected from said one of said plurality of networks. However, Miner discloses an electronic assistant device that comprises a switching resource to switch multiple communications channels together (see col. 9, lines 28-30 and col. 10, lines 28-29 and Fig. 2). Miner further discloses the switching resource will deallocate ports from the channel when the subscriber is disconnected from a call session (see col. 35, lines 7-20) and would reallocate the port for use to other channels if the port becomes unassigned.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the port assigning operation of the switch Tingley and Berlovitch with the port deallocation method of Miner when the subscriber is disconnected from the network. The motivation to do so is to detect the availability of a port for use in a channel connection because other sessions would then be able to use the deallocated port for exchanging information.

Regarding claim 30, Tingley and Berlovitch disclose all the aspects of the claimed invention set forth in the rejection of claim 28 above, except fail to explicitly show the method of claim 28, further comprising revoking access at said port when said virtual local area network is terminated. However, Miner discloses an electronic assistant device that comprises a switching resource to switch multiple communications channels together (see col. 9, lines 28-30 and col. 10, lines 28-29 and Fig. 2). Miner further discloses the switching resource will deallocate ports from the channel when the subscriber is disconnected from a call session (see col. 35, lines 7-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the port assigning operation of the switch in Tingley and Berlovitch with the port deallocation method of Miner when the subscriber is disconnected from the network. The motivation to do so is to free up the resources that are required to support the connection because other sessions would then be able to use the deallocated port for other connections.

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley in view of Berlovitch, and in further view of Thornton et al. (USP 6,363,065).

Regarding claim 22, Tingley discloses all the aspects of the claimed invention set forth in the rejection of claim 28 above. Tingley further discloses storing the Ethernet/MAC address of the response in the Ethernet/MAC address field of the entry in the translation table (see page 5, paragraph 0050, lines 30-35). Tingley does not explicitly show the switch of claim 20, wherein

said addresses are deleted from said address table. However, Thornton discloses a routing process in which the routing table would add or delete addresses (see col. 37, lines 11-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the entry population in the address table of the switch in Tingley with the method of deleting addresses from the address table during the routing process as taught by Thornton. The motivation to do so is to dynamically remove addresses from the address table after a predetermined period of time so that the storage space saved by removing the address can be used for storing other new addresses.

5. Claims 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley in view of Berlovitch, and in further view of Fluss (USP 6,304,578).

Regarding claim 32, Tingley discloses a system for exchanging information (see Fig. 3) from a plurality of ports (**see endpoints from switch 66 to Virtual Networks A, B, and C**) to external private networks (**Virtual Networks A, B, and C**, Fig. 3), comprising:

a switch (**Switch 66**, see Fig. 3) coupled to said plurality of ports (see endpoints that couple Switch 66 to Virtual Networks A, B, and C), said switch including an address table (**Virtual Networking Device maintains a translation table that maps IP addresses to Ethernet/MAC addresses**, see page 5, paragraph 0049, lines 1-8 and Fig. 5);

a plurality of virtual local area networks (**Virtual Networks A, B, C**, Fig. 3) created by said switch according to an address in said address table (**Switch 66 inserts Virtual Network Identifier information into the packet header to mark it as belonging to a particular**

Virtual Network according to the lookup for the destination IP address, see page 2, paragraph 0012, lines 13-18 and page 2, paragraph 0013, lines 1-8);

a transient computer coupled to said port (**servers for Virtual Network A is coupled to the end point of the Virtual Network Specific Ethernet Link 68**, see Fig. 3), said computer (**the server of Virtual Network A**, see element 74, Fig. 3) including an address (**the server has a physical address**, see page 2, paragraph 0011, lines 18-23) correlating to said virtual local area network (**the physical address maps to the virtual IP address of the Virtual Network**, see page 1, paragraph 0010, lines 1-16).

Tingley also discloses assigning port-based Virtual Networks which can be used to distribute packets to the proper servers, except fails to explicitly show one of said plurality of private networks is dynamically assigned to said one of said plurality of ports connected to said transient computer by said switch according to said address table.

However, Berlovitch discloses an address table (a table containing MAC addresses, Fig. 29) and a method of dynamically assigning a new VLAN to a port due to the detection of station moves (transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system and method of Tingley with the teaching of Berlovitch in dynamically assigning a new VLAN to a port based on the network address of the end-station in the address table such that the switching system of method of Tingley will show an

address table and dynamically assign one of said plurality of private networks (Virtual Networks A, B, C) to said one of said plurality of ports connected to said transient computer (server) by said switch according to said address table (network address of server).

The motivation to do so is to assign a new LAN to a port connected to by the end-station server if necessary when there is a detection of change in the configuration of the switched network.

Tingley and Berlovitch do not explicitly show a modem coupled to said switch via an Ethernet hub, said modem to exchange information from said virtual private network assigned to said port to an external virtual private network corresponding to said computer, via said port and via said switch.

However, Fluss discloses a cable modem system where a cable modem is coupled to a switch via the Ethernet hub (see elements 200, 203, 206, 102, Fig. 1) where it is used to exchange information from subscribers to web server. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of using a switch for exchanging information for the Virtual Networks in Tingley and Berlovitch with the method of exchanging information using cable modem and Ethernet hub taught by Fluss. Having a cable modem coupled to Switch 66 would provide the combination such that a computer that is supported by cable modem would be able to exchange information with Virtual Networks that are supported by the switch.

The motivation to do so is to make the communications possible between cable modem subscribers of an external virtual private network and virtual networks of servers so that subscribers can access servers at Virtual Networks via the cable modem connection.

Regarding claim 33, Tingley discloses all the aspects of the claimed invention set forth in the rejection of claim 9 above, except fails to explicitly show the system of claim 32, further comprising a broadband connection to said modem, said broadband connection including said external virtual private network.

However, Tingley further discloses that broadband signaling technique can be used to implement the method of Tingley (see page 7, paragraph 0066, lines 1-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of using a switch for exchanging information for the Virtual Networks such that broadband connection is made to connect the subscribers to the cable modem such as the broadband signaling technique taught by Tingley. The motivation to do so is to provide larger bandwidth for subscribers to support bandwidth intensive multimedia applications when accessing servers of the virtual networks.

Regarding claim 34, Tingley further discloses the system of claim 32, wherein said address table is stored as a file (see page 7, paragraph 0059, lines 18-22).

Regarding claim 35, Tingley further discloses the system of claim 32, further comprising a private port coupling said one of said plurality of virtual local area networks to said switch (**see the endpoint of Virtual Network A that couples Virtual Network A to switch 66 and Virtual Networking Device**, Fig. 3).

Response to Arguments

6. Applicant's arguments filed on 1/17/2007 with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments on page 1, last paragraph, page 4, third paragraph, page 5 third paragraph and page 7, first paragraph of the Remarks that the Tingley and Berlovitch, taken alone or in any permissible combination, fail to teach or suggest "one of said plurality of private networks is dynamically assigned to said one of said plurality of ports in response to a detected connection to said transient computer by said switch according to said address table," the examiner respectfully disagrees. It is noted that these features of the claimed invention are met by Berlovitch and a new ground of rejection is made, as already described in the 35 U.S.C. 103(a) rejection set forth on claims 1-9, 11-12, 14-21, 23-29, 31 above. Applicant allegedly argued that col. 4, lines 27-34 disclosed in Berlovitch lack these features. However, it must be recognized that the disclosure of Berlovitch on col. 4, lines 27-34, which is dynamically assigning a VLAN to a port when there is a mismatch being detected between the network address of an end-station and a VLAN, is merely one method of dynamically assigning a VLAN to a port. Berlovitch also discloses another method of dynamically assigning a VLAN to a port on col. 9, lines 41-47, in which an address table is formed (a table containing MAC addresses, Fig. 29) and a new VLAN is dynamically assigned to a port due to the detection of station moves (to a transient computer) based on using the network address of the end-station in an address table (dynamically assigned to said one of said plurality of ports in response to a detected connection, to said transient computer by said switch according to said address table, col. 9, lines 41-47). Therefore, this disclosure of Berlovitch, col. 9, lines 41-47, reads on the limitations "one

of said plurality of private networks is dynamically assigned to said one of said plurality of ports in response to a detected connection to said transient computer by said switch according to said address table," as recited in claims 1, 9, 17, 20, 23, 25, 28 and 32.

In light of the foregoing, claims 1-9, 11-12, 14-21, 23-29, 31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley et al. (US Publication 2002/0138628) in view of Berlovitch et al. (USP 6,061,334), claims 10, 13, 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley in view of Berlovitch, and in further view of Miner (USP 6,804,332), claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley in view of Berlovitch, and in further view of Thornton et al. (USP 6,363,065), and claims 32-35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tingley in view of Berlovitch, and in further view of Fluss (USP 6,304,578).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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